

FIG. 1

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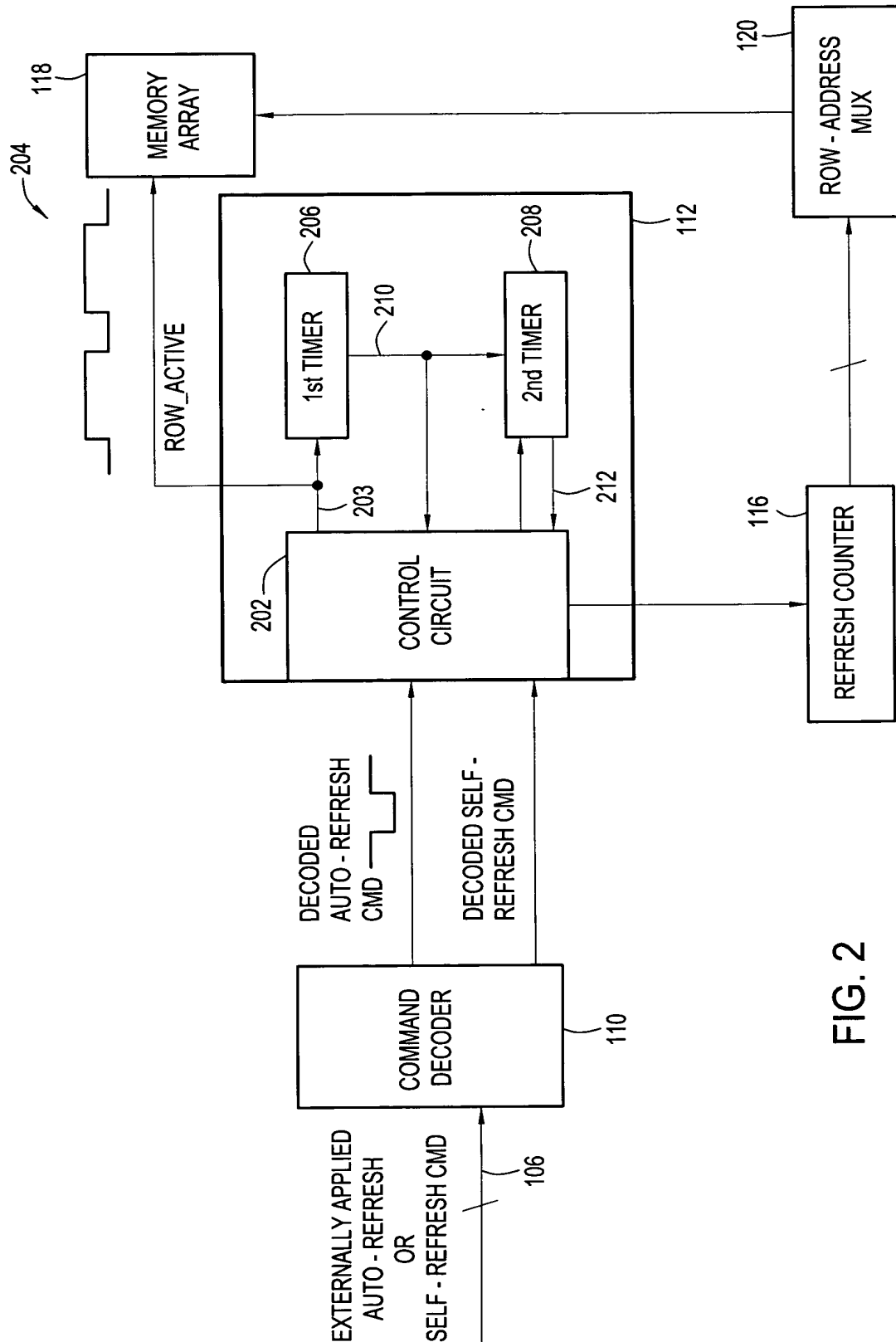
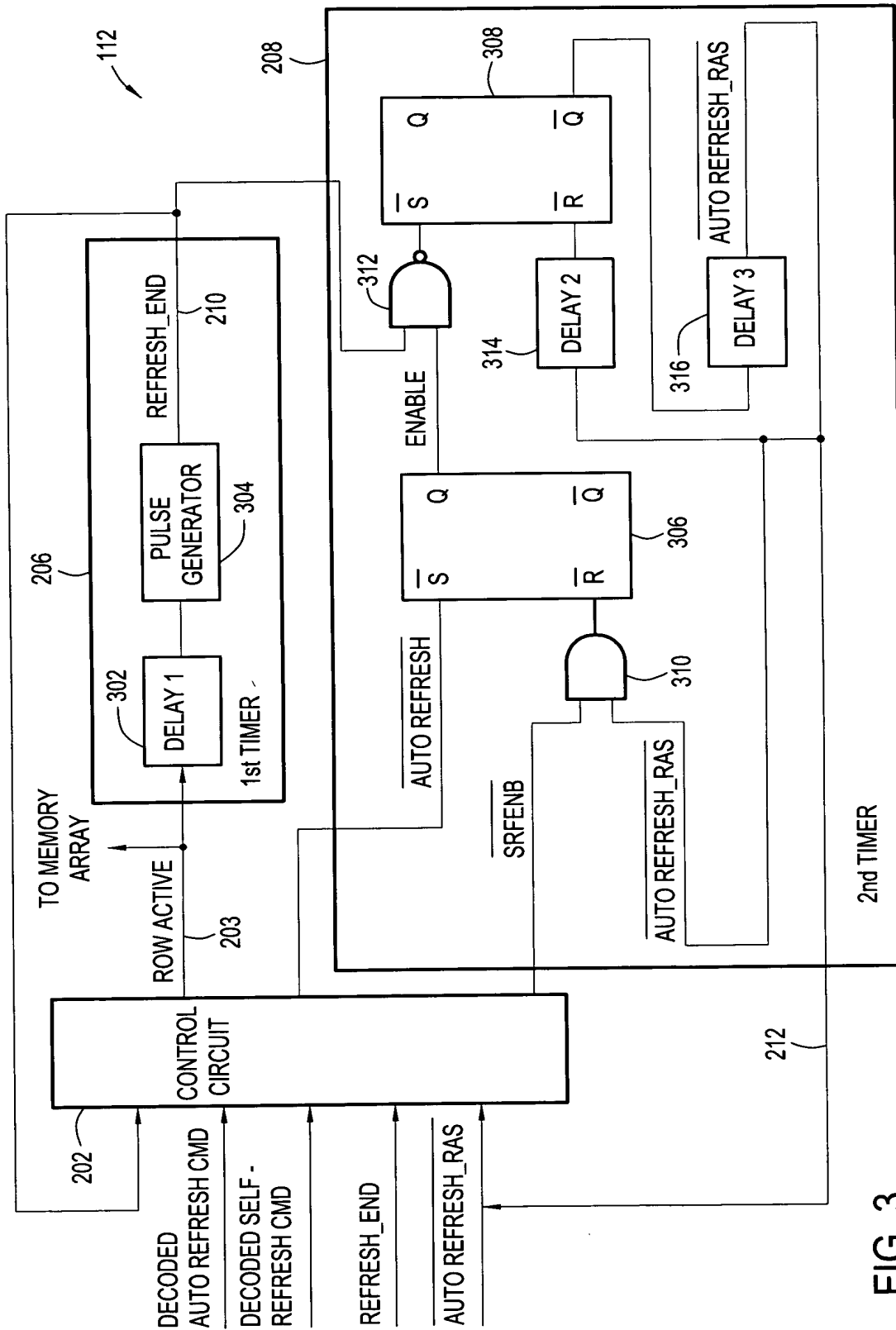


FIG. 2



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STATE	AUTO - REFRESH	AUTO - REFRESH_RAS	REFRESH_END	ENABLE	ROW_ACTIVE	DESCRIPTION
WAIT FOR AUTO - REFRESH (AR) CMD	HI	HI	LO	LO	LO	Waiting for Auto Refresh Command from Memory Controller (MC)
AR CMD RECEIVED	PULSE LO	HI	LO	HI	HI	AR Signal Pulses Low, Causing Row Active HI and Setting 1st Latch, Which Drives ENABLE HI
1st REFRESH CYCLE	HI	HI	LO	HI	HI	1st Refresh Continues Until Refresh End Pulse is Received
AR ENDS	HI	HI	PULSE HI	HI	LO	Refresh End Pulse Disables Row Active, Initiates Precharge
PRECHARGE	HI	HI	LO	HI	LO	Controlled by Delay After 2nd Latch
PRECHARGE ENDS	HI	PULSE LO	LO	LO	HI	AR_RAS Goes Low at End of Precharge DELAY, Enabling Row Active and Resetting 1st Latch
2nd REFRESH CYCLE	HI	HI	LO	HI	HI	2nd Refresh Continues Until Refresh End Pulse is Received
AR ENDS	HI	HI	PULSE HI	HI	LO	Refresh End Pulse Disables Row Active
WAIT FOR AR CMD	HI	HI	LO	LO	LO	Waiting for Auto Refresh Command from MC

FIG. 4

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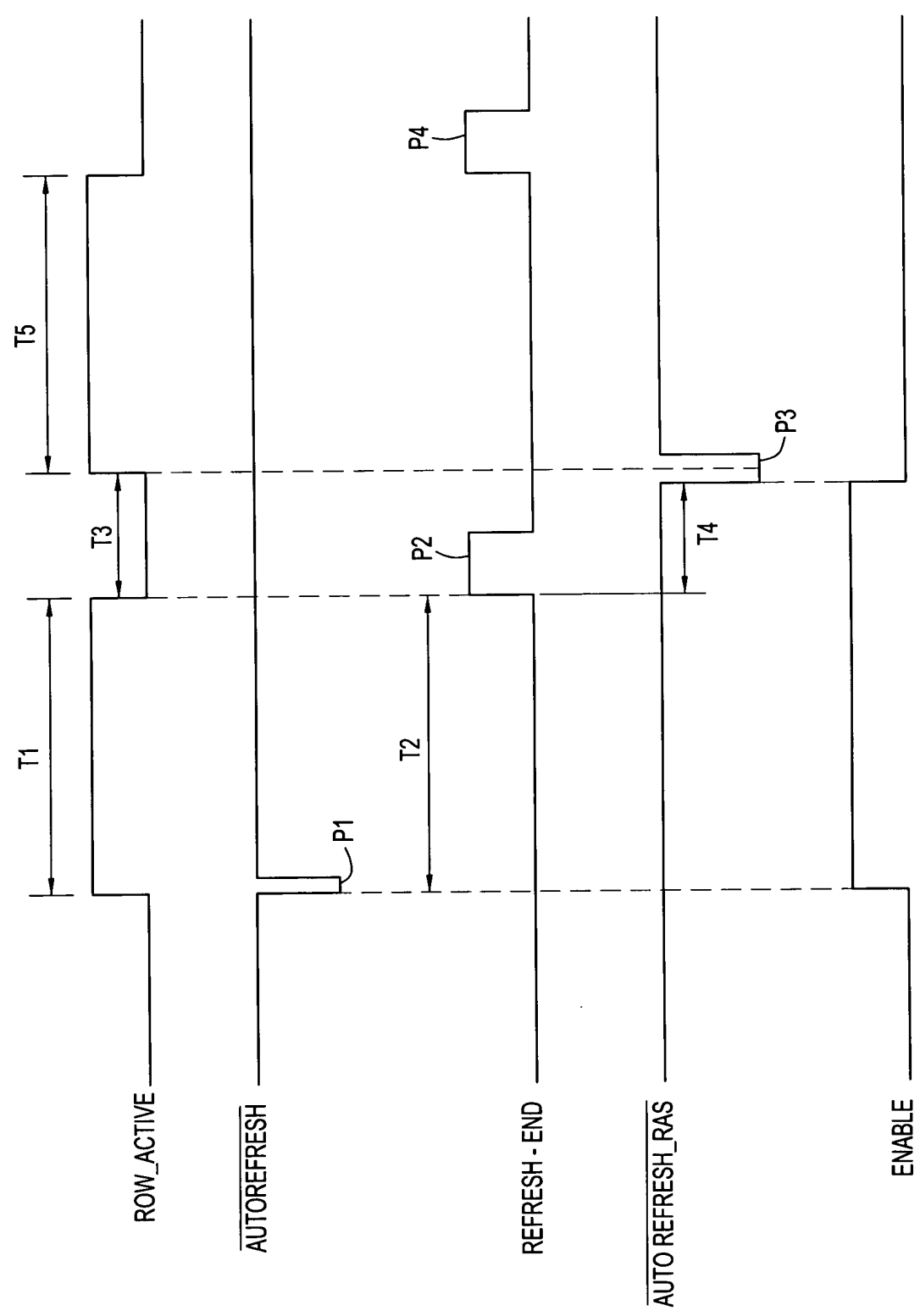


FIG. 5